

Fig. 1

ITEM	DESIGN	UNIT	NOTE
Recording channel for modulated signal	R	Channel	Other channels are used for audio signal.
Bit rate	25.2	kbps (kilobits/sec.)	Corresponding to 31.25 kbps in MIDI standards
Carrier frequency	6.30	KHz	
Symbol Velocity	6.30	kbps (kilobits/sec.)	3.15 kbps is available for low - performance recorder or transmission line.
Bits of Symbol	4	bits/symbol	
Coding	4 - bit gray code		
Modulation	16 DPSK		
Demodulation	Synchronous detection		
Synchronization	Synchronous nibble		
Delay time of audio signal in recording	0	msec	
Delay time of audio signal in playback	500	msec	
Recording Level	- 6.0 to - 12.0	dB	Relative value with respect to full range.
Silent period before tune.	$2.0 \pm$	second	Necessary for synchronization.

Fig. 2

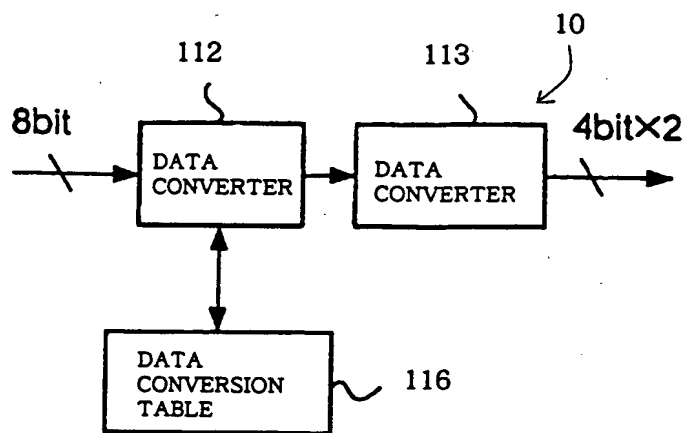


Fig. 3

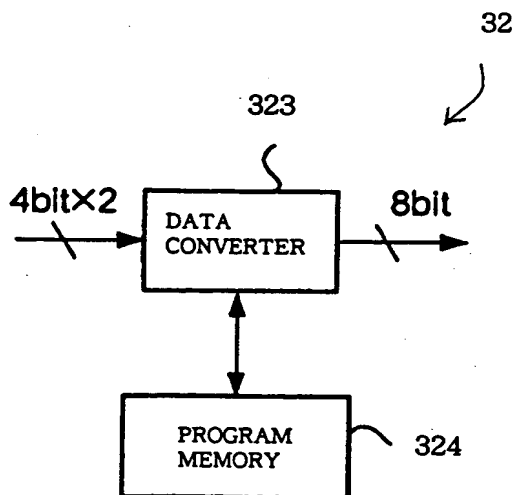


Fig. 4

00000103 014804

BIT STRING OF STATUS BYTE BEFORE DATA CONVERSION	BIT STRING AFTER DATA CONVERSION	DEFINITION OF STATUS BYTE
C0	C40	PROGRAM CHANGE AT CHANNEL 0
C1	C41	PROGRAM CHANGE AT CHANNEL 1
C2	C42	PROGRAM CHANGE AT CHANNEL 2
:	:	:
CF	C4F	PROGRAM CHANGE AT CHANNEL F
F0	C0	EXCLUSIVE
F1	C1	TIME CODE QUARTER FRAME
F2	C2	SONG POSITION POINTER
F3	C3	SONG SELECT
F4	C54	(NOT DEFINED)
F5	C55	(NOT DEFINED)
F6	C6	TUNE REQUEST
F7	C7	END OF EXCLUSIVE
F8	C8	TIMING CLOCK
F9	C9	(NOT DEFINED)
FA	CA	START
FB	CB	CONTINUE
FC	CC	STOP
FD	CD	(NOT DEFINED)
FE	CE	ACTIVE SENSING
FF	CF	SYSTEM REQUEST

Fig. 5

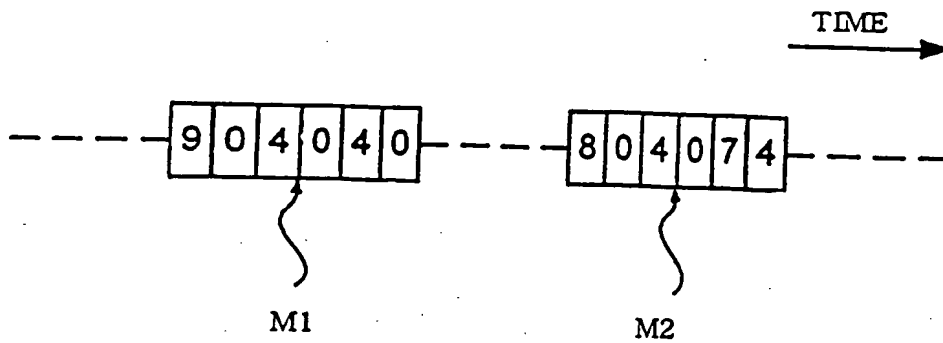


Fig. 6

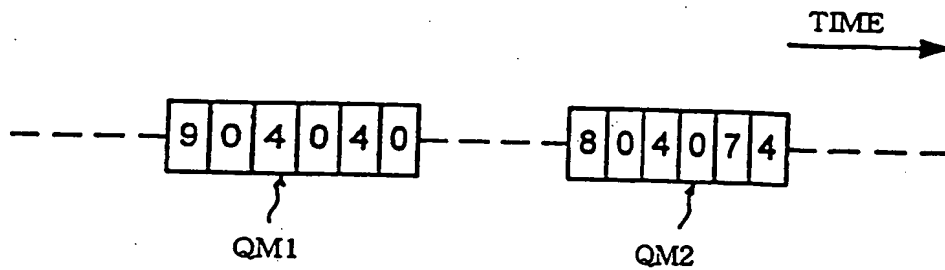


Fig. 7

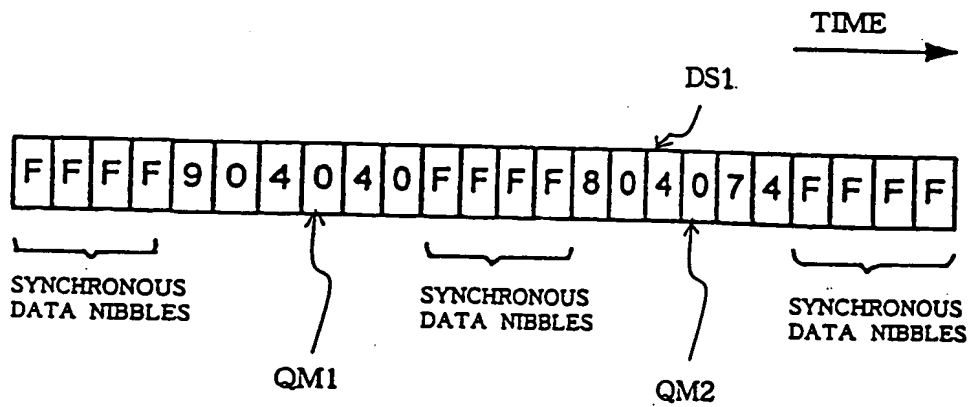


Fig. 8

TIME
→

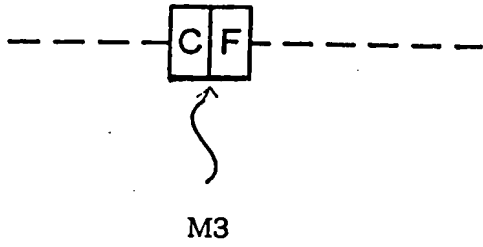


Fig. 9

TIME

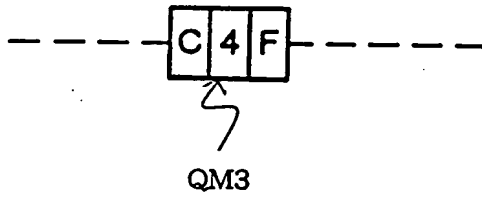



Fig. 10

TIME 

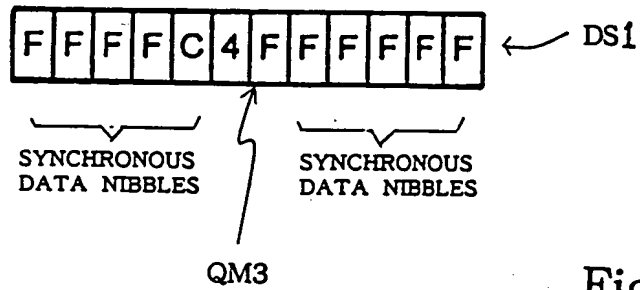


Fig. 11

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graph TD
    SB1([START]) --> SB2{DOES ANY NIBBLE REACH DATA INPUT PORT?}
    SB2 -- NO --> SB2
    SB2 -- YES --> SB3{IS RECEIVED NIBBLE EQUIVALENT TO [F]?}
    SB3 -- YES --> SB4[IGNORE RECEIVED NIBBLE]
    SB3 -- NO --> SB5{IS RECEIVED NIBBLE EQUIVALENT TO [C]?}
    SB5 -- NO --> SB6[DECIDE RECEIVED NIBBLE IS MOST SIGNIFICANT NIBBLE.]
    SB5 -- YES --> SB10{DOES NEXT NIBBLE REACH?}
    SB10 -- NO --> SB10
    SB10 -- YES --> SB11{IS RECEIVED NIBBLE EQUIVALENT TO [4]?}
    SB11 -- YES --> SB12[DECIDE MSN IS [C]]
    SB11 -- NO --> SB13{IS RECEIVED NIBBLE EQUIVALENT TO [5]?}
    SB13 -- YES --> SB14[DECIDE MSN IS [F]]
    SB13 -- NO --> SB15[DECIDE [F] AND RECEIVED NIBBLE CONSISTS OF STATUS BYTE]
    SB12 --> SB20
    SB14 --> SB20
    SB15 --> SB20
    SB6 --> SB20
    SB20{DOES NEXT NIBBLE REACH?}
    SB20 -- NO --> SB20
    SB20 -- YES --> SB21[DETERMINE STATUS BYTE]
    SB21 --> SB22[DETERMINE THE NUMBER OF DATA BYTES.]
    SB22 --> SB23[RECEIVE DATA BYTES]
    SB23 --> SB24[RESTORE MIDI DATA WORD]
    SB24 --> SB1

```

Fig. 12

FOI b7D b7C b7E

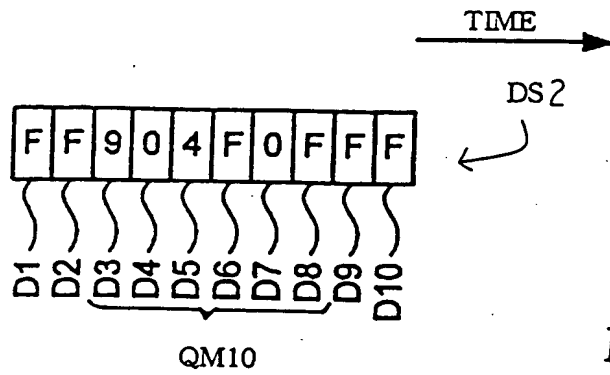


Fig. 13

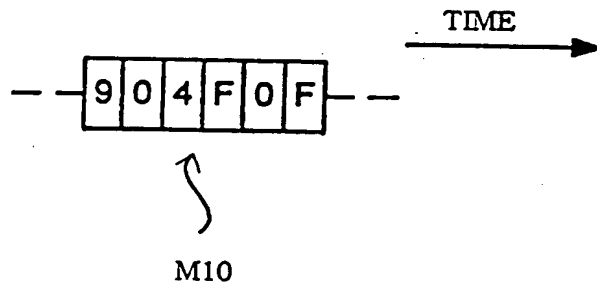


Fig. 14

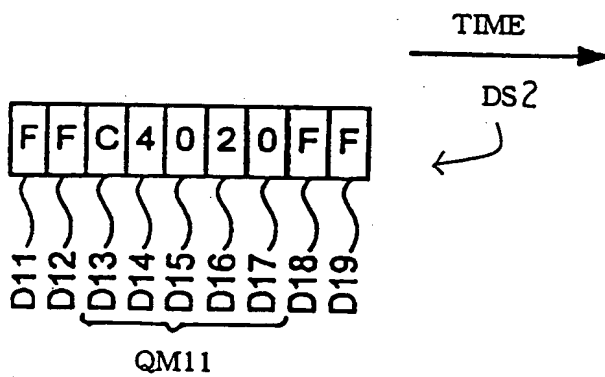


Fig. 15

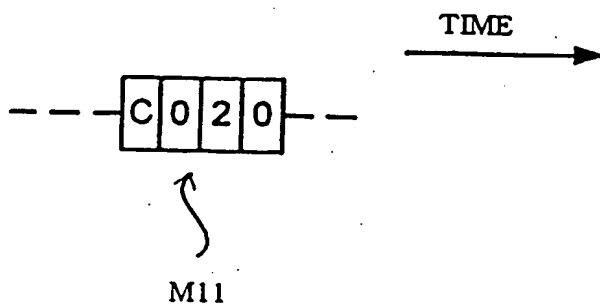


Fig. 16

FIG. 17

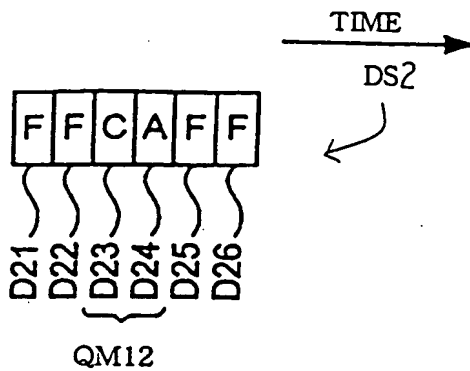


Fig. 17

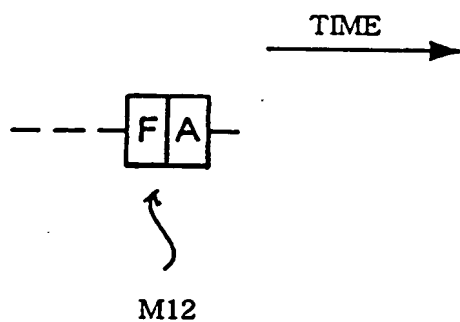


Fig. 18

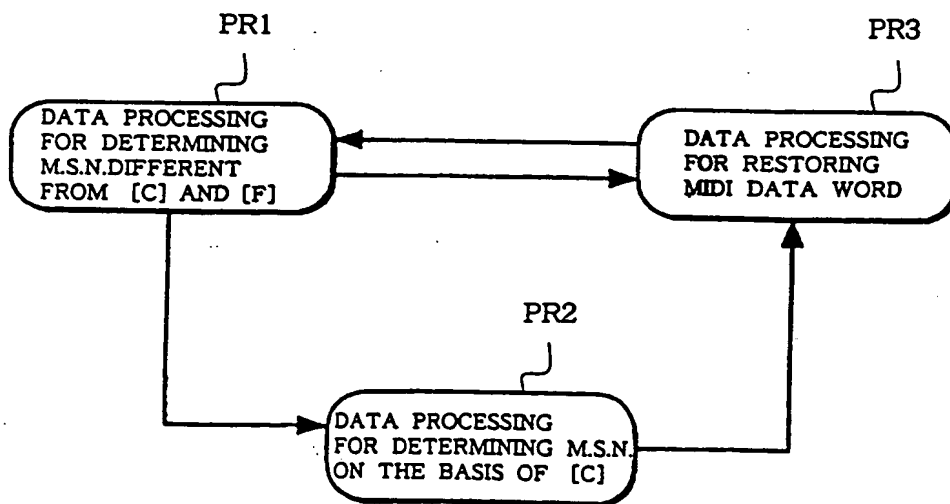


Fig. 19

09837403 041004

Gray Code Data	POSITION [Dec]	PHASE [rad]	I - COMPONENT	Q - COMPONENT
1000	0	0	1	0
1010	1	0.392699	0.92388	0.382683
1110	2	0.785398	0.707107	0.707107
0110	3	1.178097	0.382683	0.92388
0010	4	1.570796	0	1
0011	5	1.963495	-0.38268	0.92388
0111	6	2.356194	-0.70711	0.707107
1111	7	2.748894	-0.92388	0.382683
1011	8	3.141593	-1	0
1001	9	3.534292	-0.92388	-0.38268
1101	10	3.926991	-0.70711	-0.70711
0101	11	4.31969	-0.38268	-0.92388
0001	12	4.712389	0	-1
0000	13	5.105088	0.382683	-0.92388
0100	14	5.497787	0.707107	-0.70711
1100	15	5.890486	0.92388	-0.38268

Fig 20

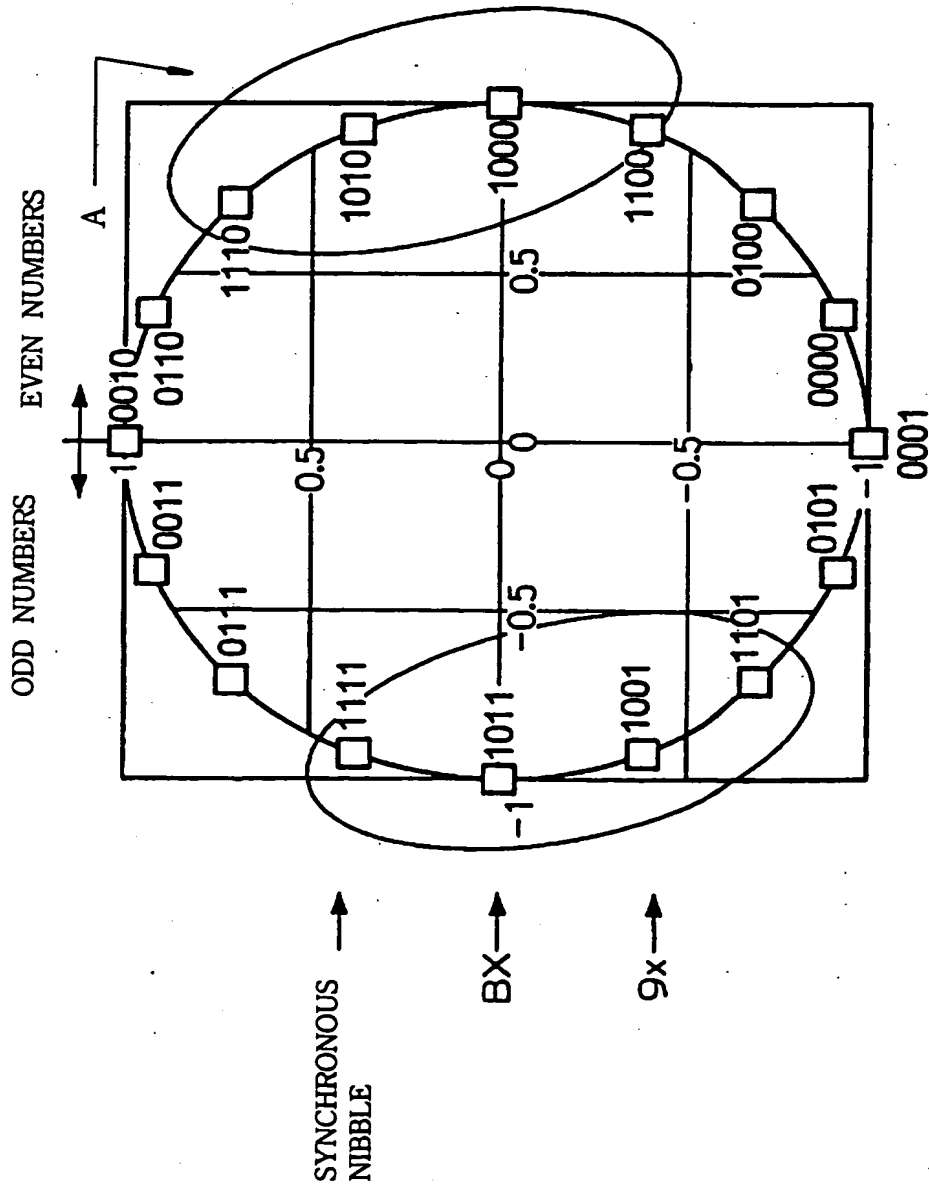


Fig. 21

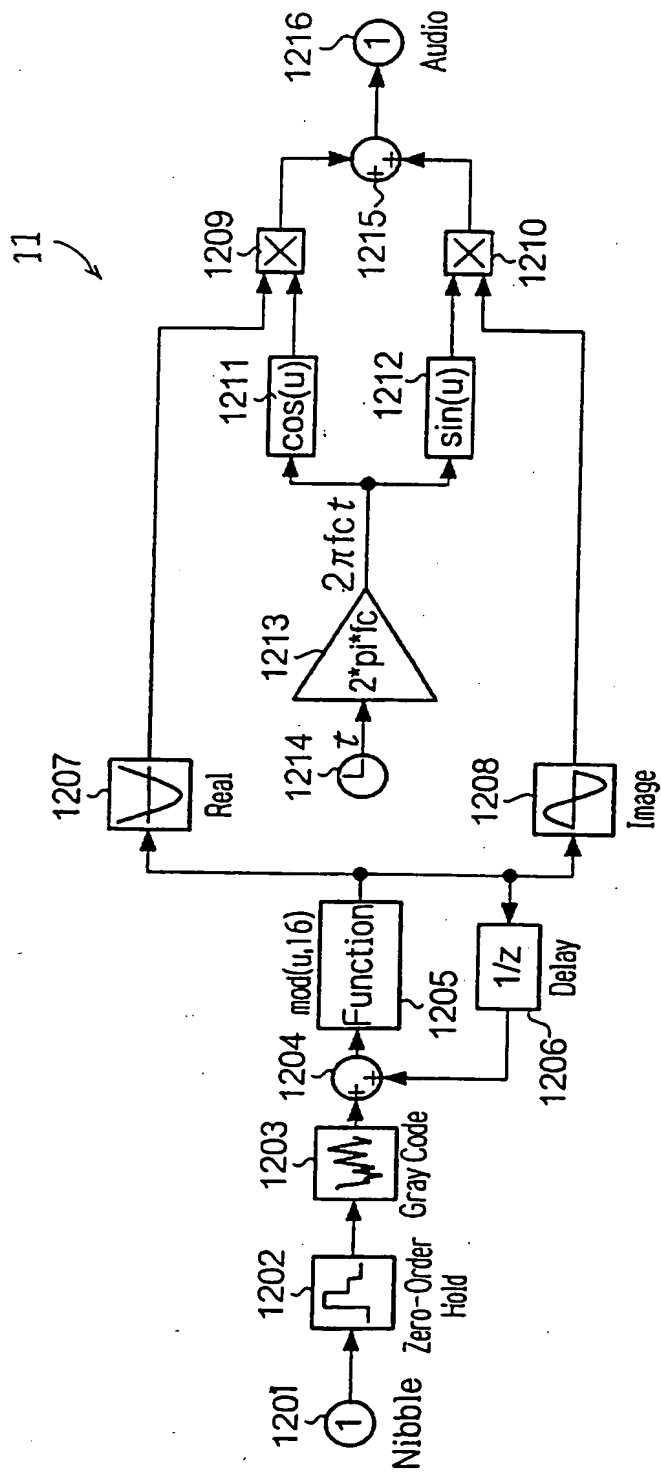


Fig. 22

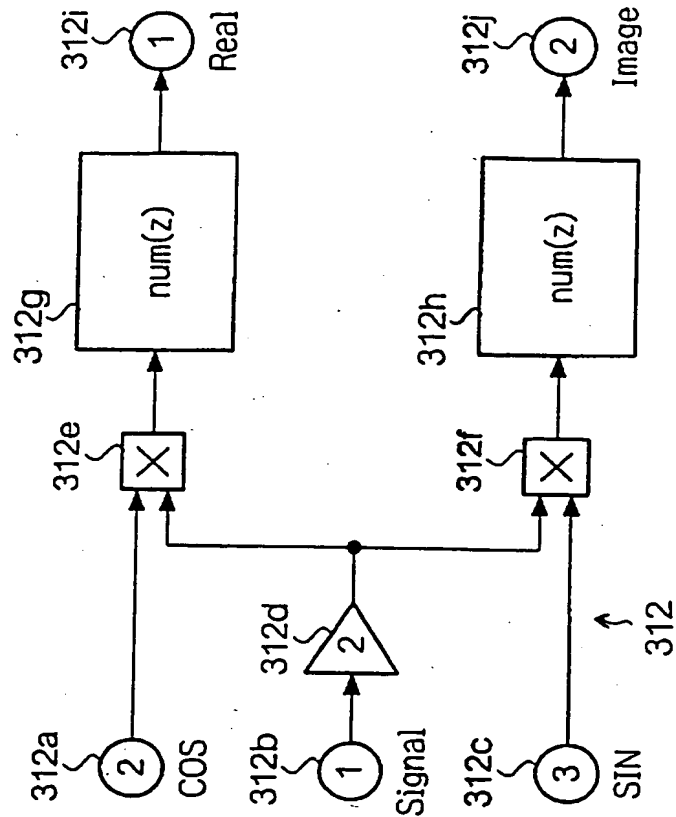


Fig. 24

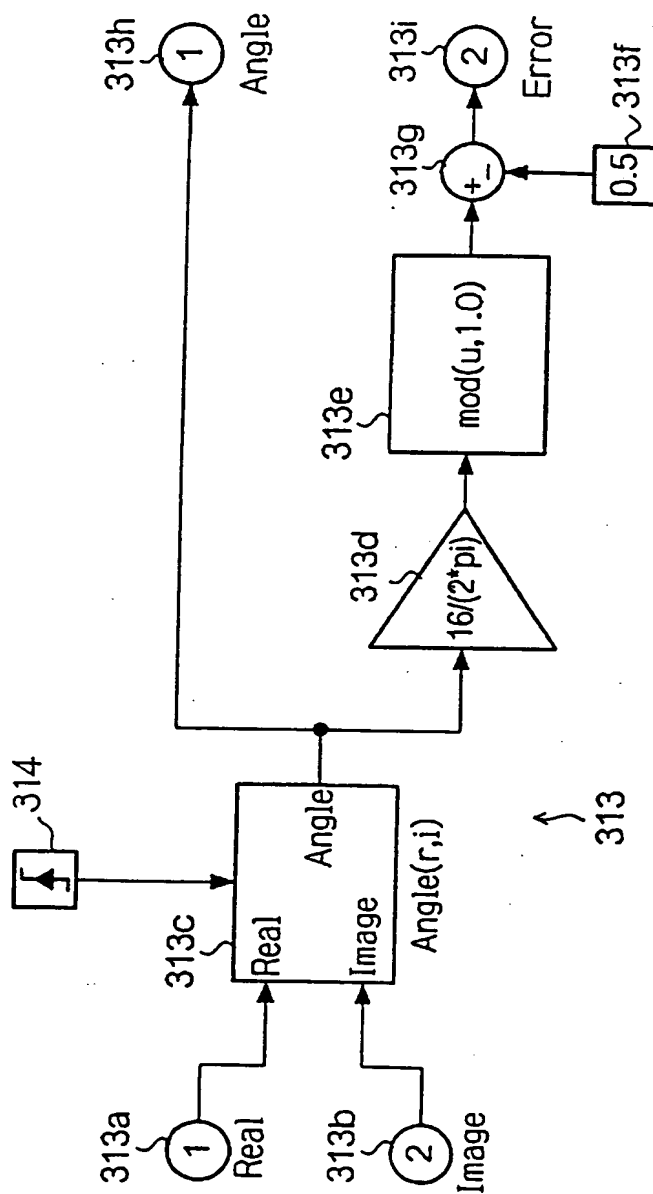


Fig. 25

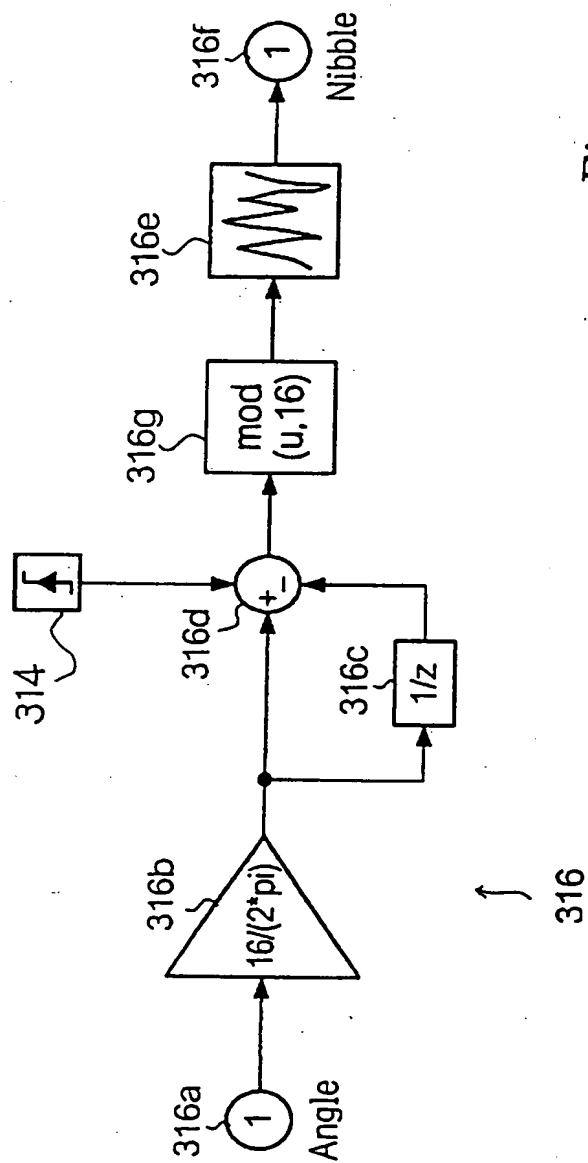


Fig. 26

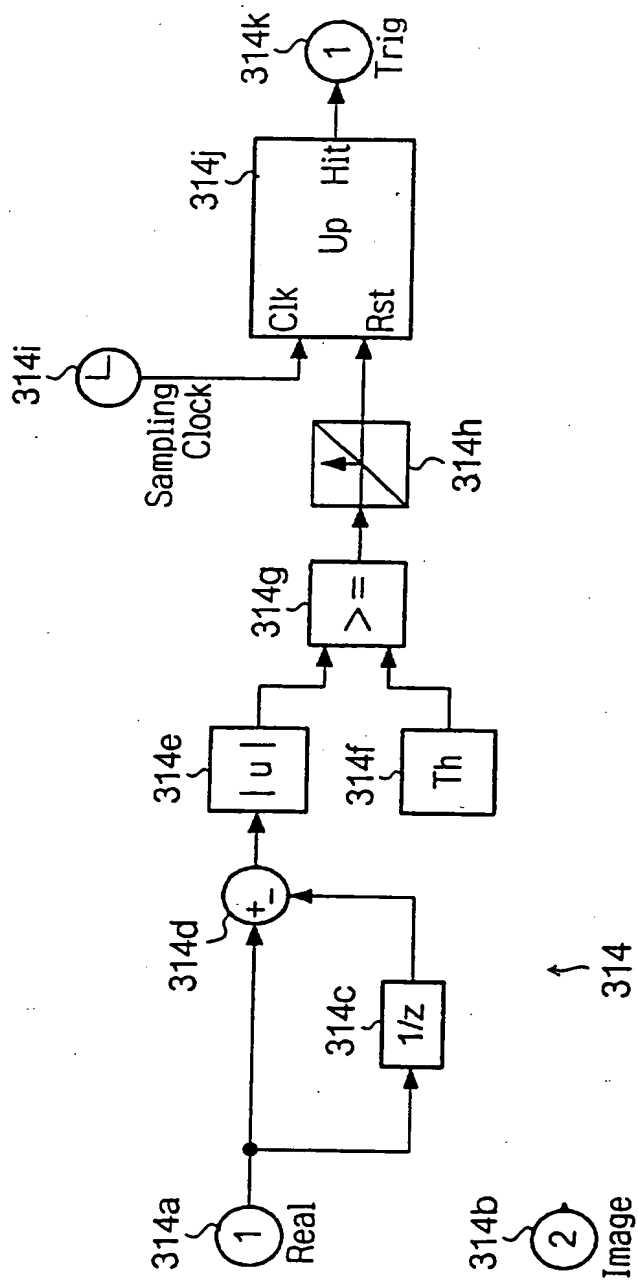


Fig. 27

315

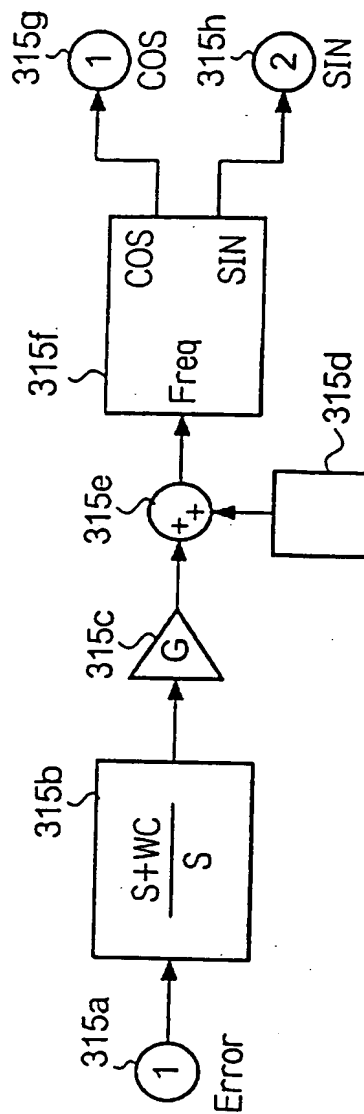


Fig. 28

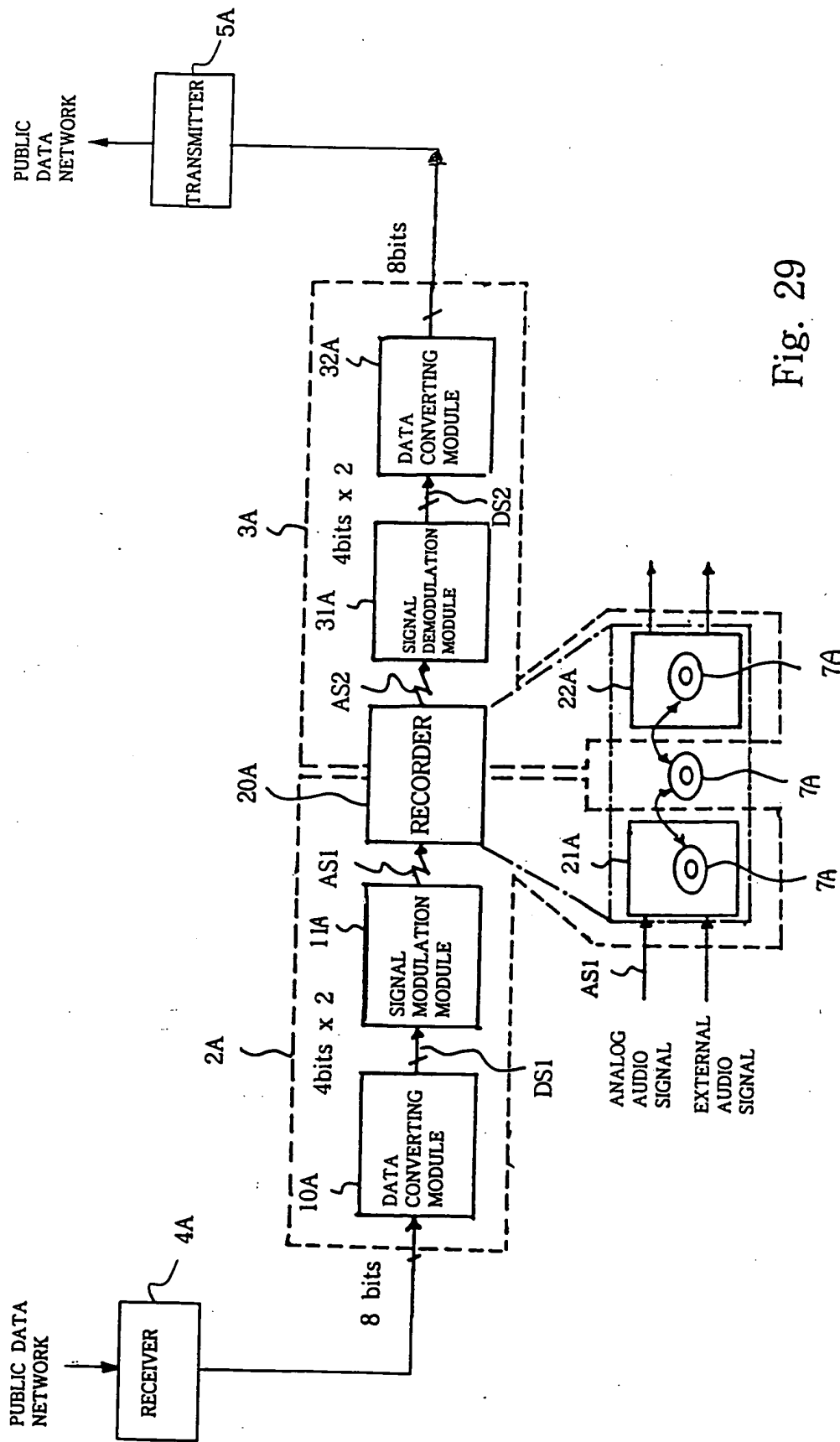


Fig. 29

ITEM	DESIGN	UNIT	NOTE
Recording channel for modulated signal	R	Channel	L channel is used for audio signal.
Bit rate	25.2	kbps (kilobits/sec.)	Corresponding to 31.25 kbps in MIDI standards
Carrier frequency	6.30	KHz	
Symbol Velocity	6.30	kbps (kilobits/sec.)	3.15 kbps is available for low - performance recorder or transmission line.
Bits of Symbol	4	bits/symbol	
Coding	4 - bit gray code		
Modulation	16 DPSK		
Demodulation	Synchronous detection		
Synchronization	Synchronous nibble		
Delay time of audio signal in recording	0	msec	
Delay time of audio signal in playback	500	msec	
Recording Level	- 6.0 to - 12.0	dB	Relative value with respect to full range.
Silent period before tune.	$2.0 \leq$	second	Necessary for synchronization.

Fig. 30

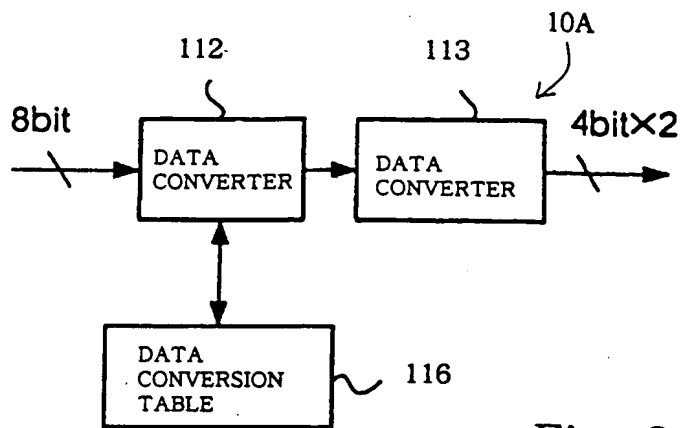


Fig. 31

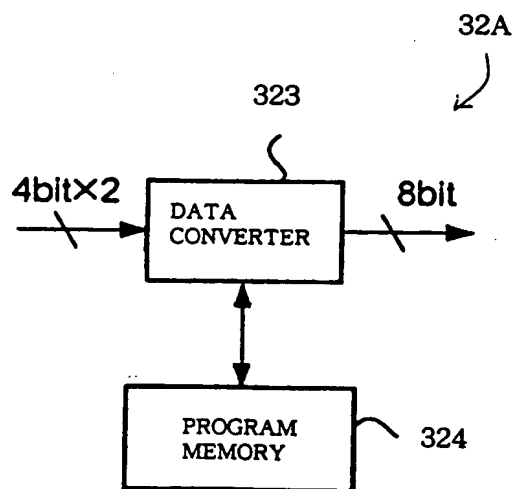


Fig. 32

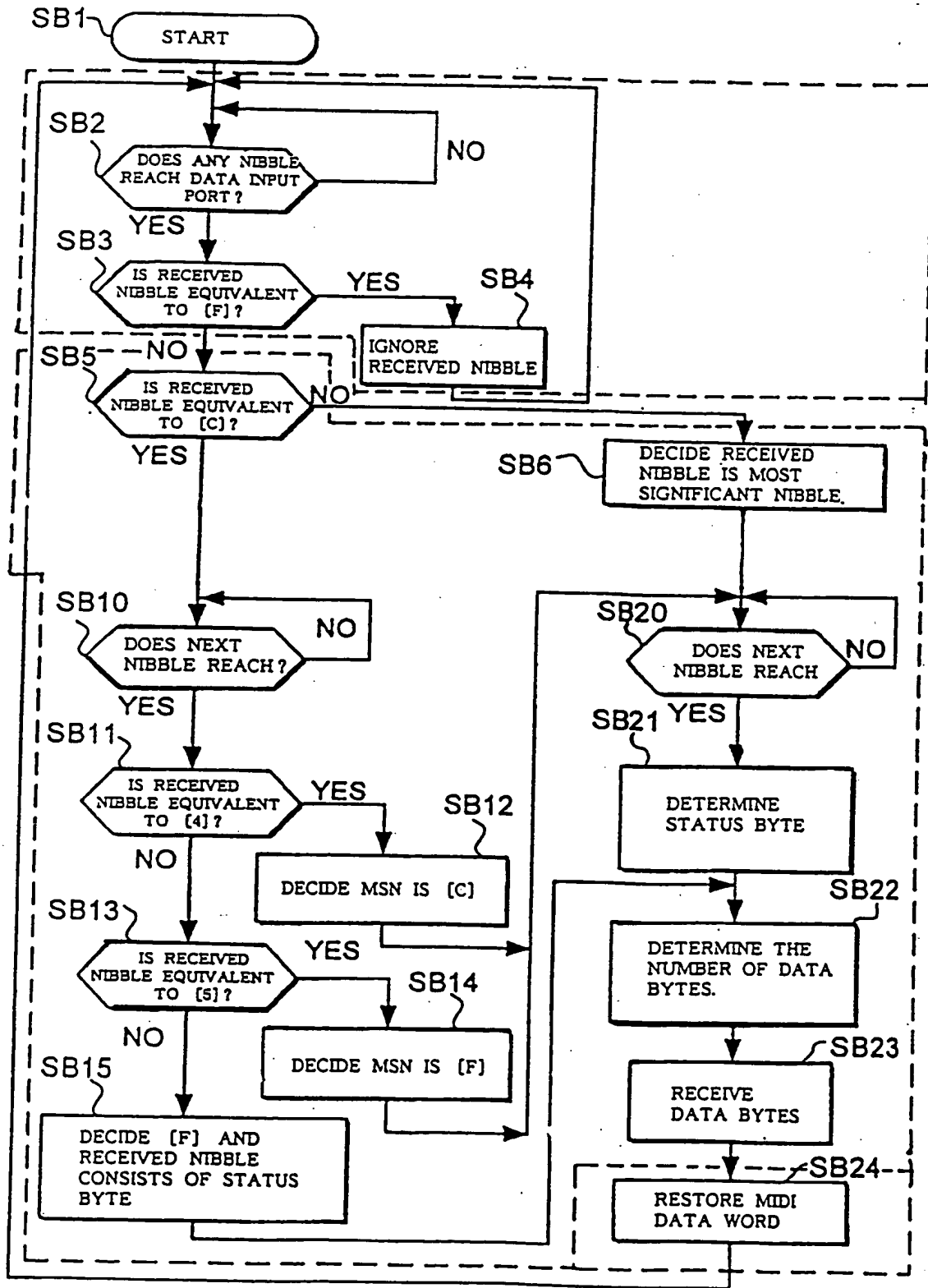


Fig. 33

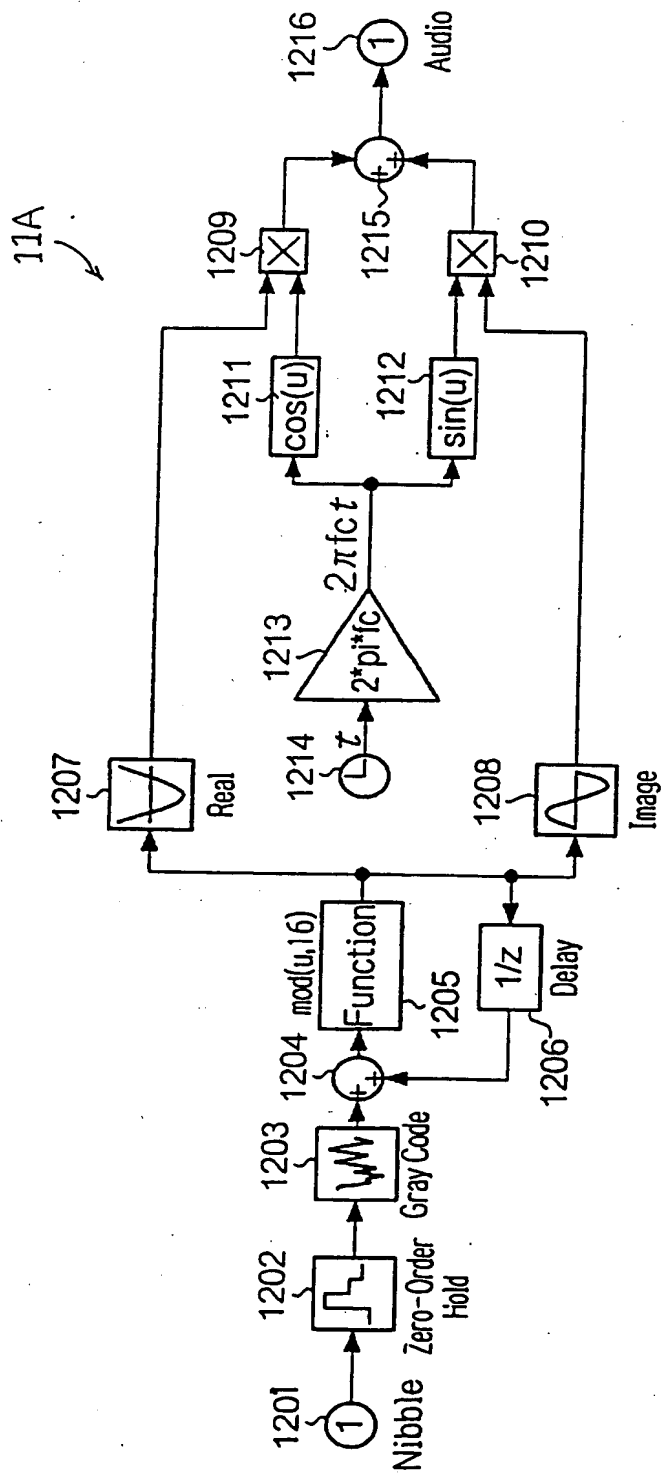


Fig. 34

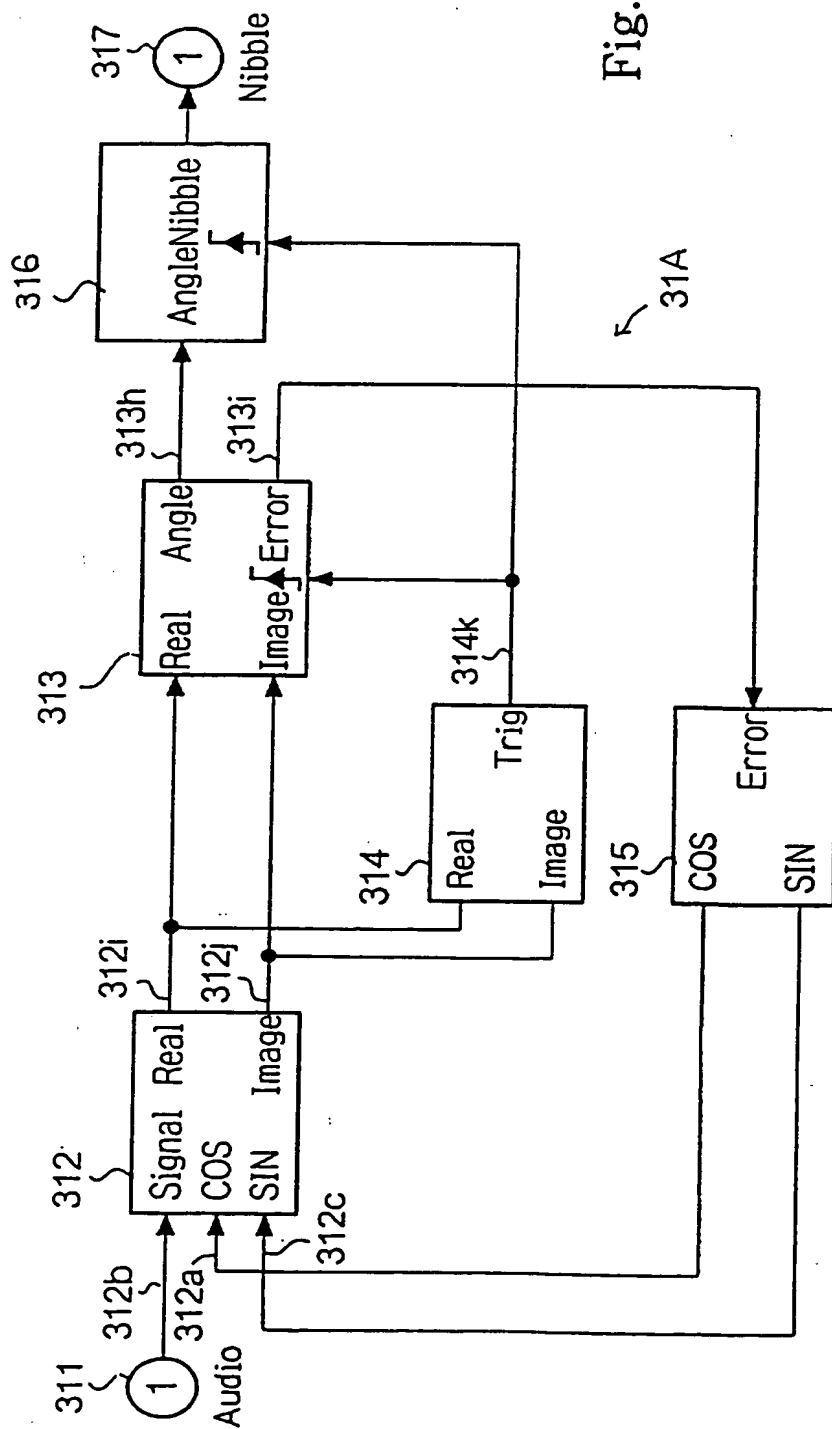


Fig. 35

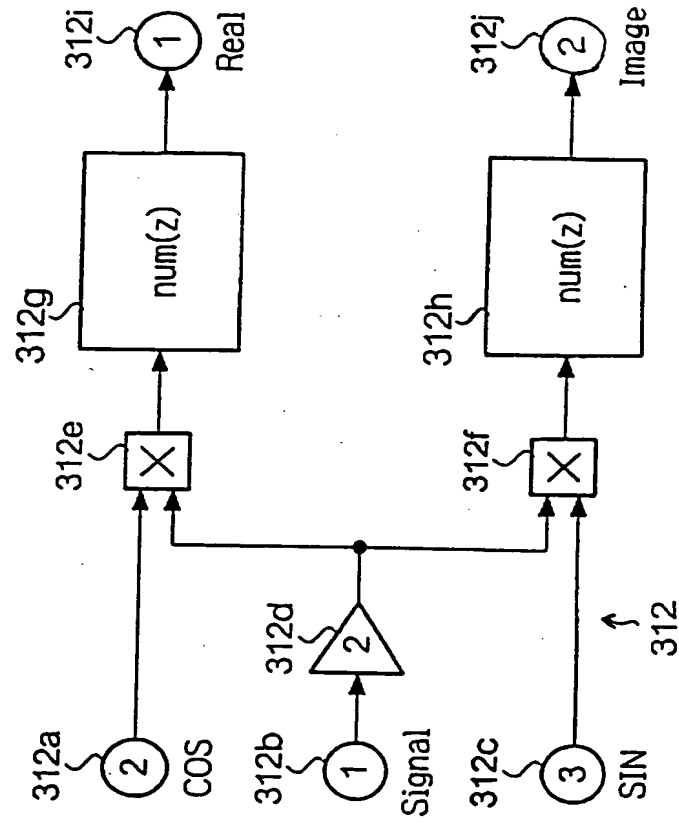


Fig. 36

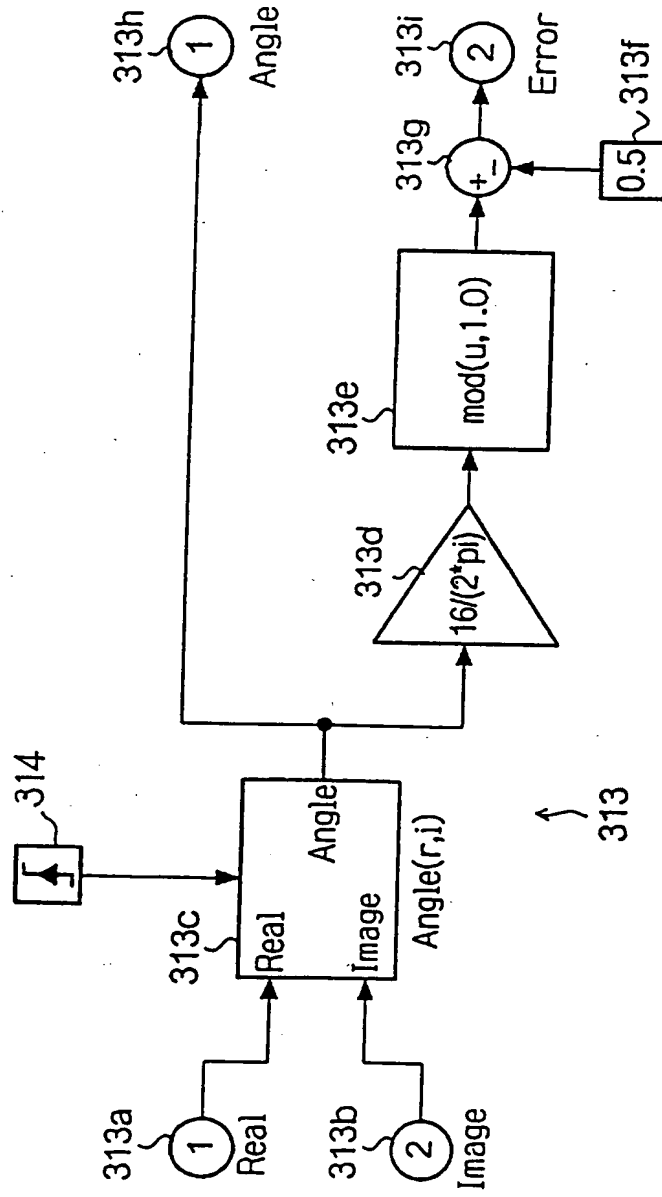


Fig. 37

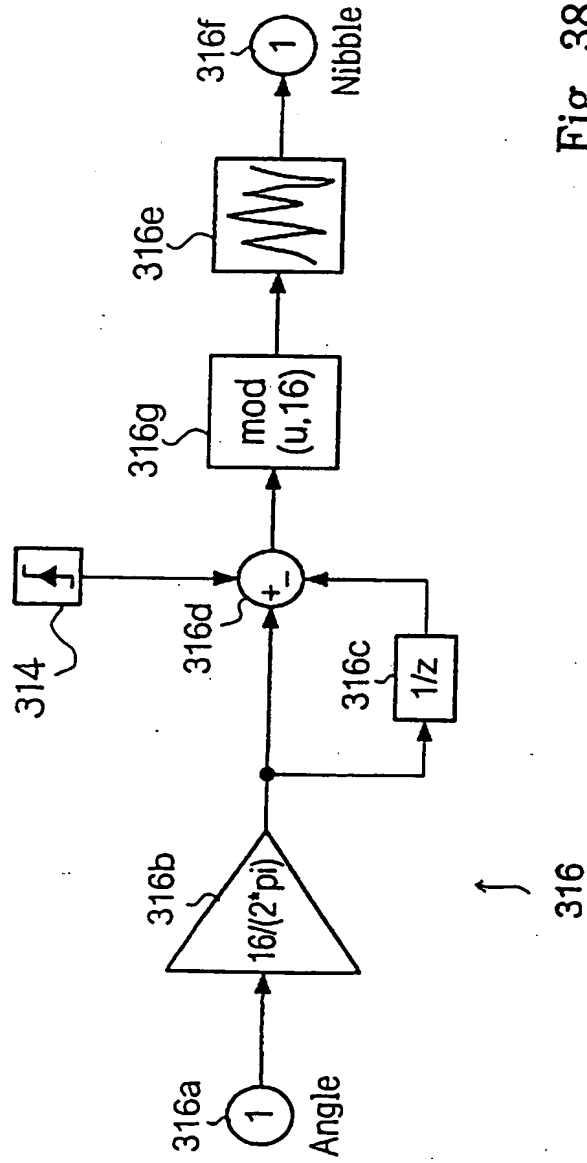


Fig. 38

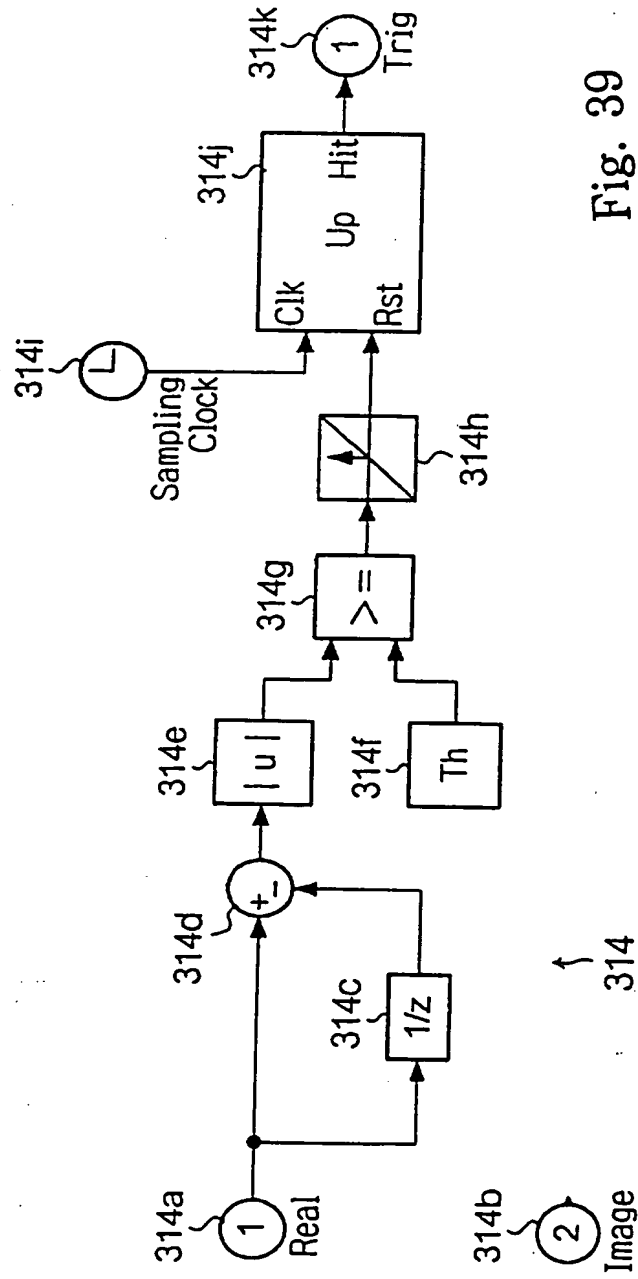


Fig. 39

315

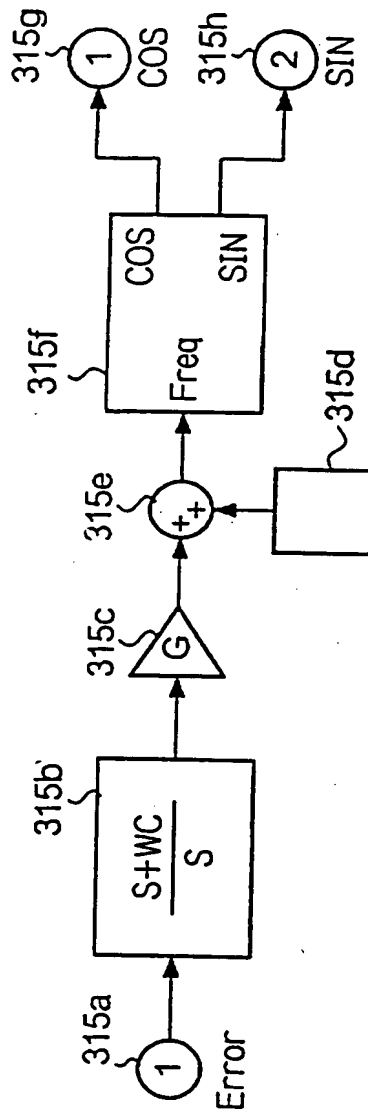


Fig. 40

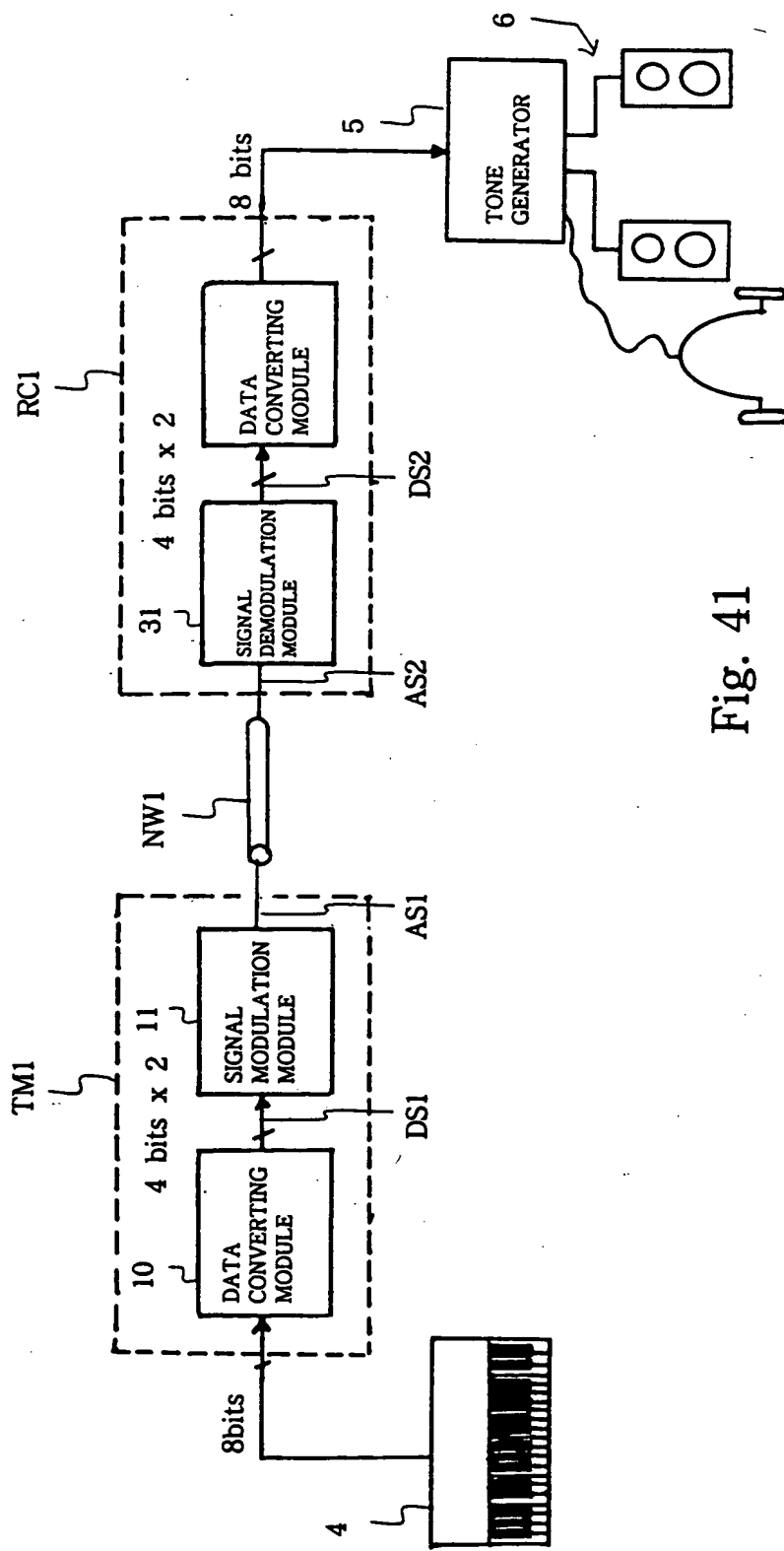


Fig. 41

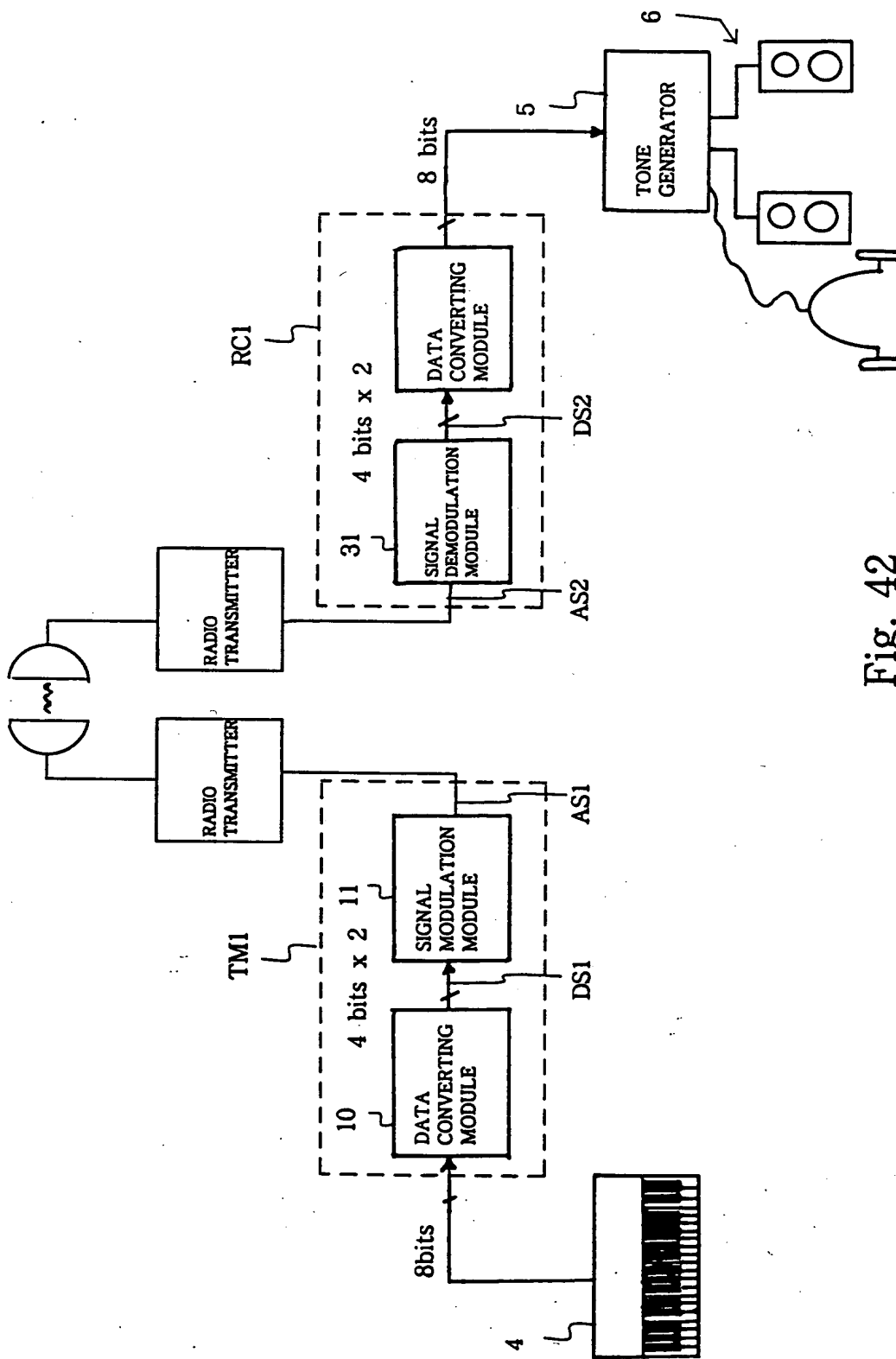


Fig. 42